Fact Sheet on Programmatic Example

(Note: this is just an example of the type of evidenced based or promising practice that may implement all or part of a BSK strategy.)

Strategy to be Addressed:

Build resiliency of youth and reduce risky-behaviors

Program Name(s):

BASICS Brief Alcohol and Cannabis Screening and Intervention for Young People;

SBIRT – Screening, Brief Intervention, Referral to Treatment

Brief Program Description:

BASICS is a model, evidence-based preventative harm reduction program for young people related to alcohol and cannabis use/abuse. Students are screened for risk; students in the risk category have two brief interview sessions, with the second session being a feedback session and motivational interviewing on principles for harm reduction.

SBIRT is a model, evidence based program currently used with adult populations in hospital emergency settings; eligible adults are screened and based on their scoring receive one of the following: feedback, brief intervention interview, brief treatment or referral to full chemical dependency treatment (SBIRT has not been used with young people and has no evidence base in that area at this time).

Prevention Results Achieved Elsewhere or in K.C. Pilot:

BASICS: Young participants in the BASICS intervention demonstrated significantly greater deceleration of substance use rates, fewer harmful effects from substance use and less substance dependence than control groups. This was also true at time of four-year follow up. Across a number of studies the program appeared to work somewhat better in combination with a parent-based intervention.

SBIRT: Receiving the intervention was associated with significant positive changes in recent alcohol or other drug use in adults, increased abstinence, fewer arrests, higher rates of employment, and decreased rates of anxiety and depression.

Target Population and number of people served:

Middle school students ages 11 to 13; approximately 93 middle schools across the County.

Estimated Cost to Administer:

Approximately $2 million per year for either program.

Estimated Cost Savings to Community:

BASICS cost per individual = approximately $71; and benefit per individual = $2,473 with a Net Positive Benefit or Savings per person of $2,402. Odds of achieving that benefit are quite high at 74%.

SBIRT cost per individual = approximately $420; and benefit per individual = $4,465 with a Net Positive Benefit or Savings per person of $4,045. Odds of achieving that benefit are quite high at 78% for the adult population currently served.

NREPP SAMHSA's National Registry of Evidence-based Programs and Practices

Brief Alcohol Screening and Intervention for College Students (BASICS)

★ Note - this program has also been adapted for high school & middle school

Brief Alcohol Screening and Intervention for College Students (BASICS) is a prevention program for college students who drink alcohol heavily and have experienced or are at risk for alcohol-related problems. Following a harm reduction approach, BASICS aims to motivate students to reduce alcohol use in order to decrease the negative consequences of drinking. It is delivered over the course of two 1-hour interviews with a brief online assessment survey taken by the student after the first session. The first interview gathers information about the student's recent alcohol consumption patterns, personal beliefs about alcohol, and drinking history, while providing instructions for self-monitoring any drinking between sessions and preparing the student for the online assessment survey. Information from the online assessment survey is used to develop a customized feedback profile for use in the second interview, which compares personal alcohol use with alcohol use norms, reviews individualized negative consequences and risk factors, clarifies perceived risks and benefits of drinking, and provides options to assist in making changes to decrease or abstain from alcohol use. Based on principles of motivational interviewing, BASICS is delivered in an empathetic, nonconfrontational, and nonjudgmental manner and is aimed at revealing the discrepancy between the student's risky drinking behavior and his or her goals and values. The intervention is delivered by trained personnel proficient in motivational interviewing and may be tailored for use with young adults in settings other than colleges.

this program has also been adapted for Cannabis Screening & Intervention (CASICS)

Descriptive Information

Areas of Interest	Substance abuse prevention
Outcomes	**Review Date: April 2008** 1: Frequency of alcohol use 2: Quantity of alcohol use 3: Negative consequences of alcohol use
Outcome Categories	Alcohol Social functioning
Ages	18-25 (Young adult)
Genders	Male Female
Races/Ethnicities	American Indian or Alaska Native Asian Hispanic or Latino White Race/ethnicity unspecified
Settings	School
Geographic Locations	Urban Suburban
Implementation History	Since BASICS was first implemented in 1992, the program has been used in approximately 1,100 sites and has reached approximately 20,000 individuals. Six studies have been conducted to evaluate the effect of the program on student behavior.
Funding/CER Studies	Partially/fully funded by National Institutes of Health: Yes Evaluated in comparative effectiveness research studies: Yes
Adaptations	Although BASICS was developed to reduce drinking among college students, it has been adapted and used in other settings, for other populations, and for other behaviors. For example, the intervention has been used to reduce alcohol use in homeless youth and adults, high school students, and employees; cannabis use and eating disorders in adolescents and college students; depression in college students; high-risk sexual

	behaviors among men having sex with men; and domestic violence perpetrated by men.
Adverse Effects	No adverse effects, concerns, or unintended consequences were identified by the developer.
IOM Prevention Categories	Indicated

Quality of Research

Review Date: April 2008

Documents Reviewed

The documents below were reviewed for Quality of Research. The research point of contact can provide information regarding the studies reviewed and the availability of additional materials, including those from more recent studies that may have been conducted.

Study 1

Baer, J. S., Kivlahan, D. R., Blume, A. W., McKnight, P., & Marlatt, G. A. (2001). Brief intervention for heavy drinking college students: 4-year follow-up and natural history. American Journal of Public Health, 91(8), 1310-1316.

Marlatt, G. A., Baer, J. S., Kivlahan, D. R., Dimeff, L. A., Larimer, M. E., Quigley, L. A., et al. (1998). Screening and brief intervention for high-risk college student drinkers: Results from a 2-year follow-up assessment. Journal of Consulting and Clinical Psychology, 66(4), 604-615.

Study 2

Borsari, B., & Carey, K. B. (2000). Effects of a brief motivational intervention with college student drinkers. Journal of Consulting and Clinical Psychology, 68(4), 728-733.

Study 3

Larimer, M. E., Turner, A. P., Anderson, B. K., Fader, J. S., Kilmer, J. R., Palmer, R. S., et al. (2001). Evaluating a brief alcohol intervention with fraternities. Journal of Studies on Alcohol, 62(3), 370-380.

Outcomes

Outcome 1: Frequency of alcohol use	
Description of Measures	Frequency of alcohol use was measured using two self-report instruments: the Q-F-P, which measures the quantity, frequency, and peak occasions of drinking, and the Daily Drinking Questionnaire (DDQ). One item of the Q-F-P measures frequency of alcohol use in the past month, with responses on a 6-point scale from 0 (less than once a month) to 5 (nearly every day). Three measures of alcohol use frequency were derived from the DDQ: number of drinking days per week, number of times using alcohol in the past month, and frequency of binge drinking in the past month. Number of drinking days per week was calculated from the reported number of drinks for each day of a typical week. Number of times using alcohol in the past month was measured with one item using a 10-point scale from 0 (no alcoholic beverages in past month) to 9 (3 or more times daily), and frequency of binge drinking was measured with one item using a 6-point scale from 0 (no binge drinking occasions in past month) to 5 (10 or more binge drinking occasions in past month). Binge drinking was defined as consuming five or more drinks on one occasion for men and four or more drinks on one occasion for women.
Key Findings	One study evaluated the impact of the intervention on students with high-risk drinking over a 4-year follow-up period. Students receiving BASICS had significantly greater reductions in drinking frequency over the first 2-year period than students in the no-treatment control group ($p < .05$). The intervention had its greatest impact between baseline and 6-month follow-up ($p < .05$) and baseline and 1-year follow-up ($p < .05$). The intervention group reported drinking significantly less frequently at 1-year follow-up than the control group ($p < .05$). A second study evaluated the short-term effects of the intervention on student binge drinkers. After statistically controlling for gender, participation in BASICS was shown to account for a significant reduction in the number of times alcohol was consumed ($p < .001$) and the frequency of binge drinking episodes ($p < .05$) from baseline to 6-week follow-up. These differences represent large and medium effect sizes (eta-squared = .28 and eta-squared = .12), respectively.
Studies Measuring Outcome	Study 1, Study 2

Study Designs	Experimental
Quality of Research Rating	3.1 (0.0-4.0 scale)

Outcome 2: Quantity of alcohol use

Description of Measures	Quantity of alcohol use was measured using two self-report instruments: the Q-F-P and the DDQ. Three measures of alcohol use quantity were derived from the Q-F-P: past-month average quantity of alcohol consumption, past-month peak alcohol consumption, and typical peak blood alcohol concentration (BAC). To assess average alcohol consumption and peak consumption, one question was asked for each with responses options ranging from 0 (0 drinks) to 5 (more than 8 drinks). BAC was estimated using the quantity and rate of consumption, body weight, and gender. Two measures of alcohol use quantity were derived from the DDQ: average drinks per drinking day and average drinks per week. Both measures were calculated from the reported number of drinks for each day of the week.
Key Findings	One study evaluated the impact of the intervention on students with high-risk drinking over a 4-year follow-up period. Compared with students in the no-treatment control group, students receiving BASICS had significantly greater reductions in drinking quantity that persisted over the 4-year period ($p < .001$), with the intervention appearing to have its greatest impact between baseline and 1-year follow-up ($p < .001$). Short-term changes in drinking quantity were found from baseline to 6-month follow-up. Specifically, students receiving BASICS had greater reductions in drinking quantity ($p < .05$), peak quantity ($p < .05$), and average drinking quantity ($p < .01$) than students in the control group. At 2-year follow-up, students in the intervention group reported drinking an average of 3.6 drinks per drinking occasion, whereas students in the control group reported drinking an average of 4.0 drinks per occasion. This difference represents a very small effect size (Cohen's d = 0.15). A second study evaluated the short-term effects of the intervention on student binge drinkers. After statistically controlling for gender, participation in BASICS was shown to account for a significant reduction in the number of drinks consumed per week ($p < .01$) from baseline to 6-week follow-up. This difference represents a large effect size (eta-squared = .21). A third study evaluated the effectiveness of the intervention among fraternity members. In comparison with students in the control group, who received a required, 1-hour didactic presentation on alcohol use, students receiving BASICS had significantly greater reductions in average drinks per week ($p < .05$) and typical peak BAC levels ($p < .05$) 1 year following the intervention. These differences represent small effect sizes (Cohen's d = 0.42 and Cohen's d = 0.38, respectively).
Studies Measuring Outcome	Study 1, Study 2, Study 3
Study Designs	Experimental
Quality of Research Rating	3.1 (0.0-4.0 scale)

Outcome 3: Negative consequences of alcohol use

Description of Measures	Negative consequences of alcohol use were measured using two self-report instruments: the Rutger's Alcohol Problem Inventory (RAPI) and the Alcohol Dependence Scale (ADS). The RAPI asks respondents to rate the frequency of 23 situations reflecting alcohol's impact on social and health functioning over the past 6 months. A score ranging from 0 to 23 is computed by adding all items occurring at least once. The ADS is an 18-item survey assessing symptoms of physical dependence on alcohol. Total scores range from 0 to 47.
Key Findings	One study evaluated the impact of the intervention on students with high-risk drinking over a 4-year follow-up period. Compared with students in the no-treatment control group, students receiving BASICS had significantly greater reductions in negative drinking consequences that persisted over a 4-year period ($p < .05$), with the intervention appearing to have its greatest impact between baseline and 1-year follow-up ($p < .01$). Students receiving BASICS reported significantly fewer negative drinking consequences at 1-year ($p < .01$), 2-year ($p < .01$), 3-year ($p < .05$), and 4-year ($p < .01$) follow-up than students in the control group. At 2-year follow-up, students receiving BASICS reported an average of 3.3 negative drinking consequences, compared with an

	average of 4.7 consequences reported by control group students, a difference representing a small effect size (Cohen's d = 0.32). In addition, only 11% of students in the intervention group were classified as showing mild dependence at 2-year follow-up, compared with 27% of those in the control group ($p < .001$).
Studies Measuring Outcome	Study 1
Study Designs	Experimental
Quality of Research Rating	3.3 (0.0-4.0 scale)

Study Populations

The following populations were identified in the studies reviewed for Quality of Research.

Study	Age	Gender	Race/Ethnicity
Study 1	18-25 (Young adult)	54.2% Female 45.8% Male	82.5% White 17.5% Race/ethnicity unspecified
Study 2	18-25 (Young adult)	56.7% Female 43.3% Male	88.3% White 11.7% Race/ethnicity unspecified
Study 3	18-25 (Young adult)	100% Male	81.8% White 12.6% Asian 3% Race/ethnicity unspecified 1.3% American Indian or Alaska Native 1.3% Hispanic or Latino

Quality of Research Ratings by Criteria (0.0-4.0 scale)

External reviewers independently evaluate the Quality of Research for an intervention's reported results using six criteria:

1. Reliability of measures
2. Validity of measures
3. Intervention fidelity
4. Missing data and attrition
5. Potential confounding variables
6. Appropriateness of analysis

For more information about these criteria and the meaning of the ratings, see Quality of Research.

Outcome	Reliability of Measures	Validity of Measures	Fidelity	Missing Data/Attrition	Confounding Variables	Data Analysis	Overall Rating
1: Frequency of alcohol use	2.2	3.1	2.0	3.8	3.5	4.0	**3.1**
2: Quantity of alcohol use	2.2	2.9	2.0	3.6	3.6	4.0	**3.1**
3: Negative consequences of alcohol use	3.0	3.5	2.0	3.8	3.5	4.0	**3.3**

Study Strengths

The use of randomized controlled trials, the relatively low attrition rates throughout follow-ups, and the sophisticated data analysis plans across studies strongly enhance confidence in the study outcomes. The investigators were particularly thoughtful in specifying and ruling out potential confounding variables. Intervention and control groups were equivalent at baseline, and missing data were replaced by a multiple imputation method to maintain the original sample size available for analyses without biasing parameter estimates. One stud gathered information about the participants' alcohol use and alcohol-related problems from collaterals, increasing confidence in the vali of the participants' self-reported assessment.

Study Weaknesses

Study weaknesses are limited to outcome and fidelity measurements. Although some of the outcome measures used have established

reliability and validity from work by independent researchers, others were developed by the investigators, who did not report information about the scales' performance in the current studies. Fidelity measures relied primarily on training, practice, supervision, and a participant satisfaction survey. Sessions were not directly observed, and there was no report of a tested instrument being used to ensure that the intervention was delivered with fidelity.

Readiness for Dissemination

Review Date: April 2008

Materials Reviewed

The materials below were reviewed for Readiness for Dissemination. The implementation point of contact can provide information regarding implementation of the intervention and the availability of additional, updated, or new materials.

Addictive Behaviors Research Center, University of Washington. (n.d.). BASICS implementation [CD-ROM]. Seattle, WA: Author.

Addictive Behaviors Research Center, University of Washington. (n.d.). BASICS protocol: Practitioner checklist. Seattle, WA: Author.

Dimeff, L. A., Baer, J. S., Kivlahan, D. R., & Marlatt, G. A. (1999). Brief Alcohol Screening and Intervention for College Students (BASICS): A harm reduction approach. New York: Guilford Press.

Program Web site, http://depts.washington.edu/abrc/basics.htm

Readiness for Dissemination Ratings by Criteria (0.0-4.0 scale)

External reviewers independently evaluate the intervention's Readiness for Dissemination using three criteria:

1. Availability of implementation materials
2. Availability of training and support resources
3. Availability of quality assurance procedures

For more information about these criteria and the meaning of the ratings, see Readiness for Dissemination.

Implementation Materials	Training and Support Resources	Quality Assurance Procedures	Overall Rating
4.0	3.8	3.9	**3.9**

Dissemination Strengths

Implementation materials are comprehensive and well organized, and they make good use of scaffolding as a learning technique. Organizational planning and readiness are incorporated into regular program implementation. The training is guided by excellent materials and is supplemented by technical assistance, site visits, and phone consultation. Multiple tools, including fidelity, outcome, and process measures, are provided to support quality assurance.

Dissemination Weaknesses

Little information on potential training and support is provided to potential implementers unless they contact the developer directly. Some process and outcome data collection tools are still under development.

Costs

The cost information below was provided by the developer. Although this cost information may have been updated by the developer since the time of review, it may not reflect the current costs or availability of items (including newly developed or discontinued items). The implementation point of contact can provide current information and discuss implementation requirements.

Item Description	Cost	Required by Developer
Program manual	$30	No
Training video	$250	No
to 3-day, off-site training	$4,000 per site per day	No
1-day workshops	$4,000 per site	No
Technical assistance	$4,000 per site per day	No

Replications

Selected citations are presented below. An asterisk indicates that the document was reviewed for Quality of Research.

* Borsari, B., & Carey, K. B. (2000). Effects of a brief motivational intervention with college student drinkers. Journal of Consulting and Clinical Psychology, 68(4), 728-733.

Britt, K., & Larimer, M. (2002). Problem drinking and the workplace: An individualized approach to prevention. Psychology of Addictive Behaviors, 16(3), 243-251.

* Larimer, M. E., Turner, A. P., Anderson, B. K., Fader, J. S., Kilmer, J. R., Palmer, R. S., et al. (2001). Evaluating a brief alcohol intervention with fraternities. Journal of Studies on Alcohol, 62(3), 370-380.

Murphy, J. G., Duchnick, J. J., Vuchinich, R. E., Davison, J. W., Karg, R. S., Olson, A. M., et al. (2001). Relative efficacy of a brief motivational intervention for college student drinkers. Psychology of Addictive Behaviors, 15(4), 373-379.

Contact Information

To learn more about implementation, contact:
George A. Parks, Ph.D.
(206) 930-1949
geoaparks@earthlink.net

Jason R. Kilmer, Ph.D.
(206) 685-4512
jkilmer@u.washington.edu

To learn more about research, contact:
John S. Baer, Ph.D.
(206) 768-5224
jsbaer@uw.edu

Consider these Questions to Ask (PDF, 54KB) as you explore the possible use of this intervention.

Web Site(s):

- **http://depts.washington.edu/abrc/basics.htm**

Washington State Institute for Public Policy

Benefit-Cost Results

Brief Alcohol Screening and Intervention of College Students (BASICS): A Harm Reduction Approach

Benefit-cost estimates updated December 2014. Literature review updated May 2014.

Current estimates replace old estimates. Numbers will change over time as a result of model inputs and monetization methods.

The WSIPP benefit-cost analysis examines, on an apples-to-apples basis, the monetary value of programs or policies to determine whether the benefits from the program exceed its costs. WSIPP's research approach to identifying evidence-based programs and policies has three main steps. First, we determine "what works" (and what does not work) to improve outcomes using a statistical technique called meta-analysis. Second, we calculate whether the benefits of a program exceed its costs. Third, we estimate the risk of investing in a program by testing the sensitivity of our results. For more detail on our methods, see our technical documentation.

Program Description: College students recruited or referred are screened for hazardous drinking (not alcohol dependence.) Those reporting high rates of consumption receive one to two brief motivational sessions that include comparison of the students' alcohol consumption relative to their peers. Interventions are typically delivered by graduate students or counselors.

Benefit-Cost Summary

Program benefits	
Participants	$1,419
Taxpayers	$660
Other (1)	$112
Other (2)	$281
Total	$2,473
Costs	($71)
Benefits minus cost	$2,401

Summary statistics	
Benefit to cost ratio	$34.76
Benefits minus costs	$2,401
Probability of a positive net present value	74 %

The estimates shown are present value life cycle benefits and costs. All dollars are expressed in the base year chosen for this analysis (2013). The economic discount rates and other relevant parameters are described in our technical documentation.

Detailed Monetary Benefit Estimates

Source of benefits	Benefits to Participants	Taxpayers	Other (1)	Other (2)	Total benefits
From primary participant					
Crime	$0	$30	$70	$15	$116
Labor market earnings (smoking)	($2)	($1)	$0	$0	($3)
Health care (smoking)	$0	$0	$0	$0	$0
Labor market earnings (problem alcohol use)	$1,401	$598	$0	$285	$2,284
Property loss (problem alcohol use)	$3	$0	$6	$0	$9
Health care (problem alcohol use)	$18	$33	$37	$17	$104
Adjustment for deadweight cost of program	$0	$0	$0	($36)	($36)
Totals	**$1,419**	**$660**	**$112**	**$281**	**$2,473**

We created the two "other" categories to report results that do not fit neatly in the "participant" or "taxpayer" perspectives. In the "Other (1)" category we include the benefits of reductions in crime victimization and the economic spillover benefits of improvement in human capital outcomes. In the "Other (2)" category we include estimates of the net changes in the value of a statistical life and net changes in the deadweight costs of taxation.

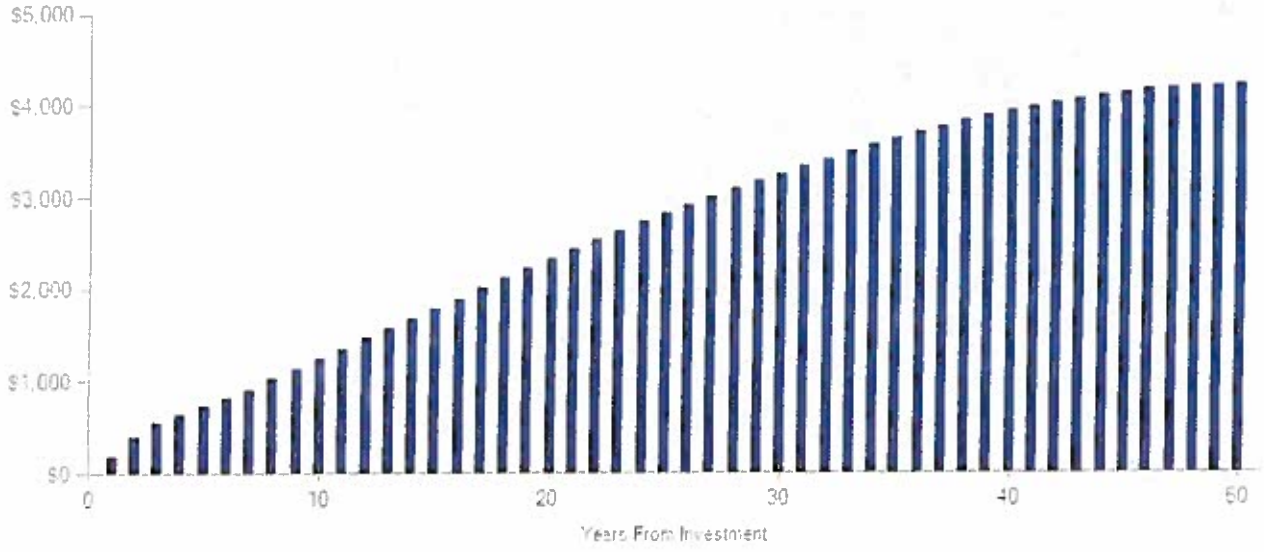
Detailed Cost Estimates

	Annual cost	Program duration	Year dollars	Summary statistics	
Program costs	$72	1	2014	Present value of net program costs (in 2013 dollars)	($71)
Comparison costs	$0	1	2014	Uncertainty (+ or - %)	20 %

The average duration of the intervention in these studies was 1.5 hours. Assume 1) that 36% of screened students are eligible and agree to the intervention (per Carey et al., 2006); 2) that screening takes 30 minutes to administer the screen, score and identify those with hazardous drinking, that graduate students receive $25 per hour.

The figures shown are estimates of the costs to implement programs in Washington. The comparison group costs reflect either no treatment or treatment as usual, depending on how effect sizes were calculated in the meta analysis. The uncertainty range is used in Monte Carlo risk analysis, described in our **technical documentation**.

Cumulative Net Cash Flows Over Time (Non-Discounted Dollars)



Meta-Analysis of Program Effects

Outcomes measured	Primary or secondary participant	No. of effect sizes	Treatment N	Unadjusted effect size (random effects model)		Adjusted effect sizes and standard errors used in the benefit-cost analysis					
						First time ES is estimated			Second time ES is estimated		
				ES	p-value	ES	SE	Age	ES	SE	Age
Problem alcohol use	Primary	19	3249	-0.167	0.001	-0.167	0.032	19	-0.023	0.048	22
Regular smoking	Primary	1	119	0.000	1.000	0.000	0.025	19	n/a	n/a	22
Cannabis use	Primary	1	119	0.000	1.000	0.000	0.025	19	n/a	n/a	22

Citations Used in the Meta-Analysis

Borsari, B., & Carey, K.B. (2000). Effects of a brief motivational intervention with college student drinkers. *Journal of Consulting and Clinical Psychology, 68*(4), 728-733.

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Murphy, J.G., Duchnick, J.J., Vuchinich, R.E., Davison, J.W., Karg, R.S., Olson, A.M., ... Coffey, T.T. (2001). Relative efficacy of a brief motivational intervention for college student drinkers. *Psychology of Addictive Behaviors, 15*(4), 373-379.

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Schaus, J.F., Sole, M.L., McCoy, T.P., Mallett, N., & O'Brien, M.C. (2009). Alcohol screening and brief intervention in a college student health center: A randomized controlled trial. *Journal of Studies on Alcohol and Drugs*, Suppl. 16, 131-141.

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For further information, contact:
(360) 586-2677, institute@wsipp.wa.gov

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Med Care. 2010 Jan;48(1):18-24. doi: 10.1097/MLR.0b013e3181bd498f.

Evaluation of the Washington state screening, brief intervention, and referral to treatment project: cost outcomes for Medicaid patients screened in hospital emergency departments.

Estee S[1], Wickizer T, He L, Shah MF, Mancuso D.

Author information

Abstract

BACKGROUND: Substance abuse is a major determinant of morbidity, mortality, and health care resource consumption. We evaluated a screening, brief intervention, and referral to treatment (SBIRT) program, implemented in 9 hospital emergency departments (ED) in Washington State.

METHODS: Working-age, disabled Medicaid patients who were screened and received a brief intervention (BI) from April 12, 2004 through September 30, 2006 were included in the study's intervention group (N = 1557). The comparison group (N = 1557), constructed using (one-to-one) propensity score matching, consisted of Medicaid patients who received care in one of the counties in which an intervention hospital ED was located but who did not receive a BI. We estimated difference-in-difference (DiD) regression models to assess the effects of the SBIRT program for different patient groups.

RESULTS: The SBIRT program was associated with an estimated reduction in Medicaid costs per member per month of $366 (P = 0.05) for all patients, including patients who received a referral for chemical dependency (CD) treatment. For patients who received a BI only and had no CD treatment in the year before or the year after the ED visit, the estimated reduction in Medicaid per member per month costs was $542 (P = 0.06). The SBIRT program was also associated with decreased inpatient utilization (P = 0.04).

CONCLUSION: SBIRT programs have potential to limit resource consumption among working-age, disabled Medicaid patients. The hospital ED seems especially well suited for SBIRT programs given the large number of injured patients treated in the ED and the fact that many conditions treated are related to substance abuse.

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Washington State Institute for Public Policy

Benefit-Cost Results

Brief Intervention in emergency department (SBIRT)

Benefit-cost estimates updated December 2014. Literature review updated May 2014.

Current estimates replace old estimates. Numbers will change over time as a result of model inputs and monetization methods.

The WSIPP benefit-cost analysis examines, on an apples-to-apples basis, the monetary value of programs or policies to determine whether the benefits from the program exceed its costs. WSIPP's research approach to identifying evidence-based programs and policies has three main steps. First, we determine "what works" (and what does not work) to improve outcomes using a statistical technique called meta-analysis. Second, we calculate whether the benefits of a program exceed its costs. Third, we estimate the risk of investing in a program by testing the sensitivity of our results. For more detail on our methods, see our technical documentation.

Program Description: Patients in emergency departments are screened for "hazardous" alcohol use (not alcohol dependence). Those screening positive receive a brief intervention, delivered by health care staff or other professional. The intervention includes feedback on the patients' consumption compared to their peers and motivational interview to encourage reduction in consumption. Patients typically receive a single intervention lasting 15 minutes to one hour. Patients meeting diagnostic criteria would be referred to chemical dependency treatment.

Benefit-Cost Summary

Program benefits	
Participants	$2,761
Taxpayers	$1,228
Other (1)	$59
Other (2)	$417
Total	$4,465
Costs	($420)
Benefits minus cost	$4,045

Summary statistics	
Benefit to cost ratio	$10.64
Benefits minus costs	$4,045
Probability of a positive net present value	78 %

The estimates shown are present value, life cycle benefits and costs. All dollars are expressed in the base year chosen for this analysis (2013). The economic discount rates and other relevant parameters are described in our technical documentation.

Detailed Monetary Benefit Estimates

Source of benefits	Benefits to: Participants	Taxpayers	Other (1)	Other (2)	Total benefits
From primary participant					
Labor market earnings (problem alcohol use)	$2,748	$1,172	$0	$600	$4,520
Property loss (problem alcohol use)	$4	$0	$7	$0	$11
Health care (problem alcohol use)	$9	$56	$52	$28	$145
Adjustment for deadweight cost of program	$0	$0	$0	($210)	($210)
Totals	**$2,761**	**$1,228**	**$59**	**$417**	**$4,465**

We created the two "other" categories to report results that do not fit neatly in the 'participant' or 'taxpayer' perspectives. In the "Other (1)" category we include the benefits of reductions in crime victimization and the economic spillover benefits of improvement in human capital outcomes. In the "Other (2)" category we include estimates of the net changes in the value of a statistical life and net changes in the deadweight costs of taxation.

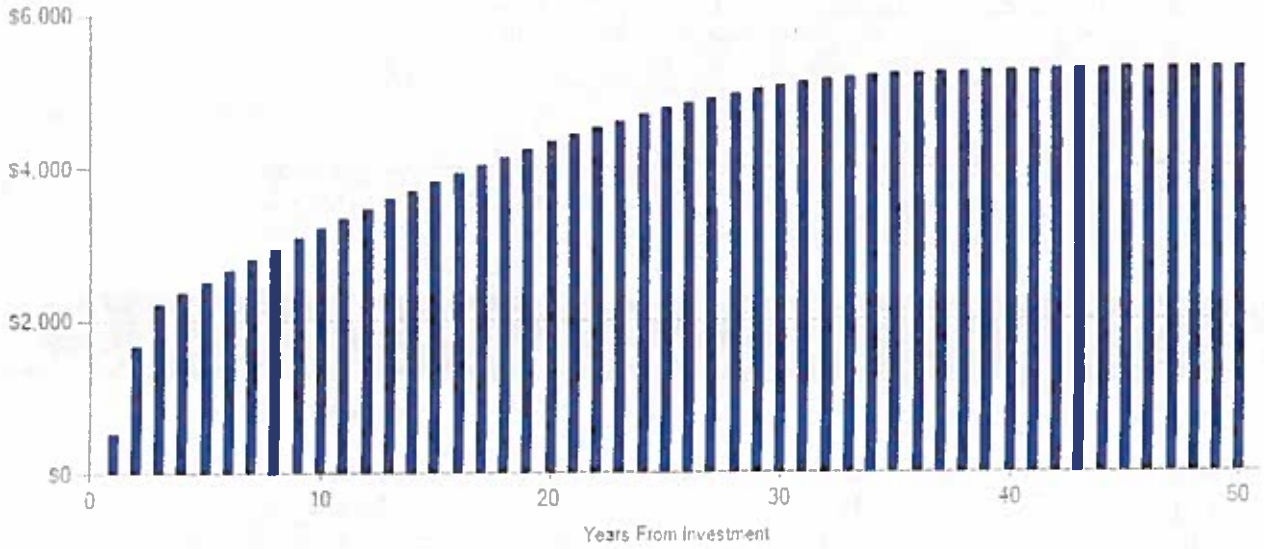
Detailed Cost Estimates

	Annual cost	Program duration	Year dollars	Summary statistics	
Program costs	$362	1	2005	Present value of net program costs (in 2013 dollars)	($420)
Comparison costs	$0	1	2005	Uncertainty (+ or - %)	10 %

According to multisite US study, of 7751 patients screened, 1132 were eligible and consented (Academic ED SBIRT Research Collaborative (2007). The impact of screening, brief intervention, and referral for treatment on emergency department patients' alcohol use. Annals of Emergency Medicine, 50, 6, 699-710) In Washington State, cost estimates from 2005 indicate $53 per patient screened

The figures shown are estimates of the costs to implement programs in Washington. The comparison group costs reflect either no treatment or treatment as usual, depending on how effect sizes were calculated in the meta-analysis. The uncertainty range is used in Monte Carlo risk analysis, described in our technical documentation.

Cumulative Net Cash Flows Over Time (Non-Discounted Dollars)



Meta-Analysis of Program Effects

Outcomes measured	Primary or secondary participant	No. of effect sizes	Treatment N	Unadjusted effect size (random effects model)		Adjusted effect sizes and standard errors used in the benefit-cost analysis					
						First time ES is estimated			Second time ES is estimated		
				ES	p-value	ES	SE	Age	ES	SE	Age
Problem alcohol use	Primary	22	3630	-0.115	0.001	-0.115	0.029	34	-0.016	0.044	36
Emergency department visits	Primary	1	52	-0.317	0.322	-0.317	0.321	34	n/a	n/a	36
Drinking and driving	Primary	4	777	-0.158	0.048	-0.158	0.080	34	n/a	n/a	35
Injuries	Primary	1	122	-0.266	0.037	-0.266	0.127	34	n/a	n/a	35

Citations Used in the Meta-Analysis

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For further information, contact:
(360) 586-2677, institute@wsipp.wa.gov

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